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XXXVII. *Concerning Aneurysms in the Thigh.* By Benjamin Gooch, Surgeon at Norwich.

Redde, May 19,
1775.

IN the case described in the preceding paper, we observed a division of the femoral artery into two trunks of equal size, running parallel, and so near together, as that we could conveniently include them in one ligature with the needle, avoiding the nerve, after raising them up with the dissecting forceps, by a small portion of the connecting cellular membrane. And here we found no occasion to take up any other vessel. This makes the third instance in amputations of the thigh, in which I have observed such a *lusus naturæ* in the arterial system; hence I am inclined to think it not improbable that this has often happened, though I do not find it has been noticed by any other surgeon. The remark may prove of some practical use, as I have hinted in my Treatise on Wounds, p. 78. in respect to aneurysms in the thighs. It might indeed reasonably be feared, where there is only one trunk of the femoral artery without a division, which is commonly supposed to be the general case, that the lateral and communicating branches would not sufficiently enlarge, to carry on the circulation of the blood, and preserve the life and use of the limb after the operation for an aneurysm.

This point seems worthy of particular consideration; and indeed it proved the subject of some controversy, in the case of an aneurysm about four inches above the knee of a healthful young man (supposed to proceed from a fall a year before) in which my opinion was asked. Some months after, one of the surgeons concerned in the consultation told me, there appeared at this time no hopes of succeeding by the operation for the aneurysm; and but little of saving the patient's life by amputation. It is not to be expected that an operation of this nature, so very precarious in this part, should in every instance be attended with the success, which Mr. LESLIE, an eminent surgeon at Corke, had the satisfaction to experience, in a case, which is related in the Medical and Philosophical Commentaries of the Edinburgh Society, N° VI. p. 176. § 2. The surgeon, however, ought by no means to incur censure for the unfortunate event, after having taken all prudent and probable measures, to preserve his patient's limb^(a).

(a) The celebrated CYPRIANUS, who was professor of anatomy and surgery in the university of Franeker, and the most famous lithotomist of his time, after successfully performing the Cæsarian operation at Lewarden, in which he found the *fœtus* in the right Fallopian tube, wrote a letter, upon that occasion, to Sir THOMAS MILLINGTON, physician to CHARLES II.; and afterwards he happily cut that eminent physician for the stone, at the age of sixty-eight, in London. In which letter, he earnestly admonishes surgeons not to be intimidated by threatening prospects, from undertaking dangerous and difficult operations, lest their reputations should suffer for want of success. This letter, written in French, consists of seventy pages, containing much solid, practical knowledge and was annexed to BELLOSTE's 4th edition of his *Chirurgien de l'Hôpital*, printed at Amsterdam in the year 1707.

From

From these considerations, I communicated my thoughts upon this subject to some of my brethren, wishing to have experiments made upon brutes, that might ascertain as far as possible, by analogy, a matter which appeared to us of great importance; and this motive induced one of them, with the assistance of a person of superior knowledge in the anatomy and diseases of horses, to resolve upon dissecting out of the thighs of a horse and a dog, the first opportunity that offered, the trunk of the artery to the length of two or three inches; to observe whether there was such a division of it, as I have remarked in the human species; and then to treat the wound as after the operation for an aneurysm, attending particularly to all the consequences. This kind of *lusus naturæ* has been often found in the *bumerus*, by anatomists. After having engaged my friends at Norwich in this pursuit, something happening to prevent their carrying the design into execution so soon as they intended, determined me, with the assistance of Mr. REVANS, whom I have mentioned before, to make the experiment upon a full-grown young spaniel, and to keep a journal of the occurrences in consequence thereof.

On January the 19th, 1775, we performed the operation with very little trouble, having securely bound the animal to prevent interruption. We designedly included in the ligatures, with the trunk of the artery, a little above the middle of the thigh, the vein and nerve accompanying it, in order to render the experiment more decisive,

decisive, if it succeeded, than it would have been, had the artery alone been taken in. We discovered no division in the trunk of the artery like what I have observed; and having made the wound of a sufficient extent, we succeeded at once in passing the ligatures with the needle, without the least hæmorrhage. The wound was anointed with fresh hog's lard, to tempt the dog the more readily to lick it; and this application was often repeated, having at the same time the whole limb embrocated with *linimentum volatile*, which was well rubbed in. After the operation, the dog shewed no signs of great pain, had no spasmodic motions in the limb, but made no use of it, and we could feel no pulsation below the ligatures. On the 20th, nothing appeared worthy notice, only that there was a warmth throughout the limb, nearly to the same degree as in the other. 21st, A little œdematous swelling appeared upon the leg; in other respects, as yesterday. 22d, Same appearances as yesterday; begun to move the limb. 23d, Moved the limb rather more; wound looked well. 24th, Moved the limb more than yesterday; wound well digested; œdematous swelling less. 25th, The upper ligature came off; no hæmorrhage ensued. 26th, Wound in a healing state; he began to step upon the limb; œdematous swelling quite dispersed. 27th, All appearances favourable. 28th, The other ligatures came off, without any oozing of blood. 29th, The wound contracted into a narrow compass, by virtue of his

his own balsamic tongue^(b); no other application was made to the wound or limb than mentioned at first. 30th, No material alteration. 31st, He used the limb almost as well as the other. Feb. 9th, Dr. D'URBAN, of Halefworth, who attended to the sequel of this experiment, strictly examined the limb with Mr. REVANS and me; and we could feel no pulsation of the trunk of the artery in the space, nor in the lower part of the limb, after the wound had been perfectly healed some days. The dog was then remarkably brisk and lively, and as active as usual, without any impediment in the motion of the limb; and no swelling remained in any part of it.

We kept the dog alive till the 25th of March, and examined the limb attentively from time to time, without finding any visible defect in it, or want of sensation. Then, it not being likely that any thing more remarkable should appear, while he lived, we had him killed for farther inquiry. We had an apparatus ready for injection; but upon consideration, that carefully dissecting out the parts where we had performed the operation, and then carefully examining them, might more effectually answer our intention, we omitted the use of it. We did not find the artery divided into two equal branches, as I have mentioned and described in the human subject; but a ramification evidently appeared to

(b) See M. BELLOSTE's Dissertation upon the healing Virtue of a Dog's Tongue, in vol. II. of his Hospital Surgeon. See also the note at p. 173. of my Cases and Remarks in Surgery, edit. 2.

us much enlarged, by what we observed in the other limb, which departed from the trunk at an acute angle, just above where we passed the upper ligature in the operation; and the space between the two ligatures was filled up with a fleshy substance. Dr. D'URBAN was also present at this examination.